Hewlett Packard
Enterprise

HPE Scalable Object Storage and Tape Offerings

The world is changing and accelerating

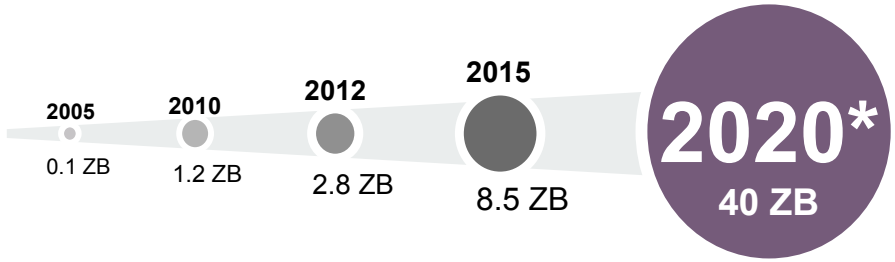
Big Data is no longer just a Buzzword – It's EVERYWHERE and growing …

Cloud

Big Data

Mobility

Volume



Variety

Velocity

IDC Estimates that by 2020, business transactions on the internet - business-to-business and business-to-consumer - will reach 450 billion per day.

Hewlett Packard Enterprise

*Source : IDC Digital Universe in 2020

What is Object and where does it fit?

What is Object-based Storage?

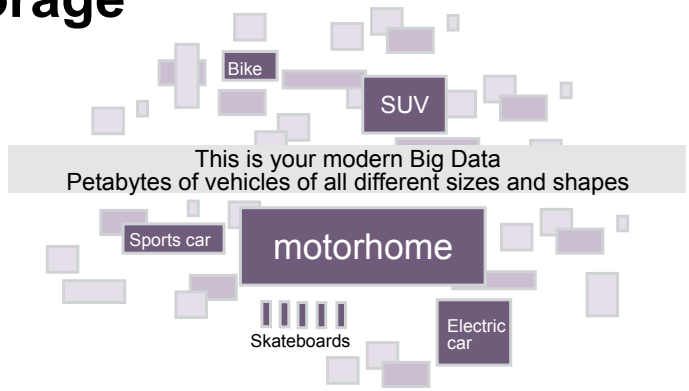
A way to store file data in the form of objects on a flat address space based on its content and attributes rather than the name and location

- It uses flat address space that enables storage of large number of objects
  - An object contains user data, related metadata, and other attributes
- Each object has a unique object ID, generated using a specialized algorithm

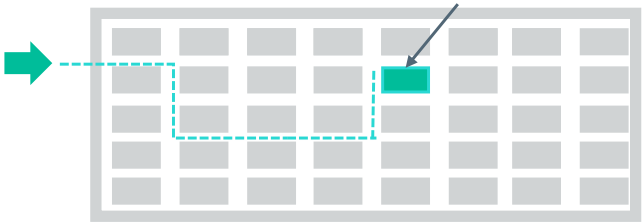
Hewlett Packard Enterprise

What is Object Storage

Valet-parking analogy

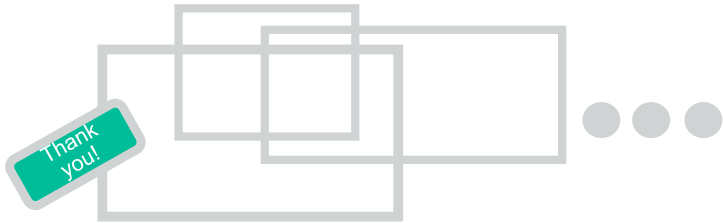


A traditional file store system is like a **self-service parking lot.** You have to find a slot that fits. No one is going to protect your car from damage. And you worry about the lot getting full.



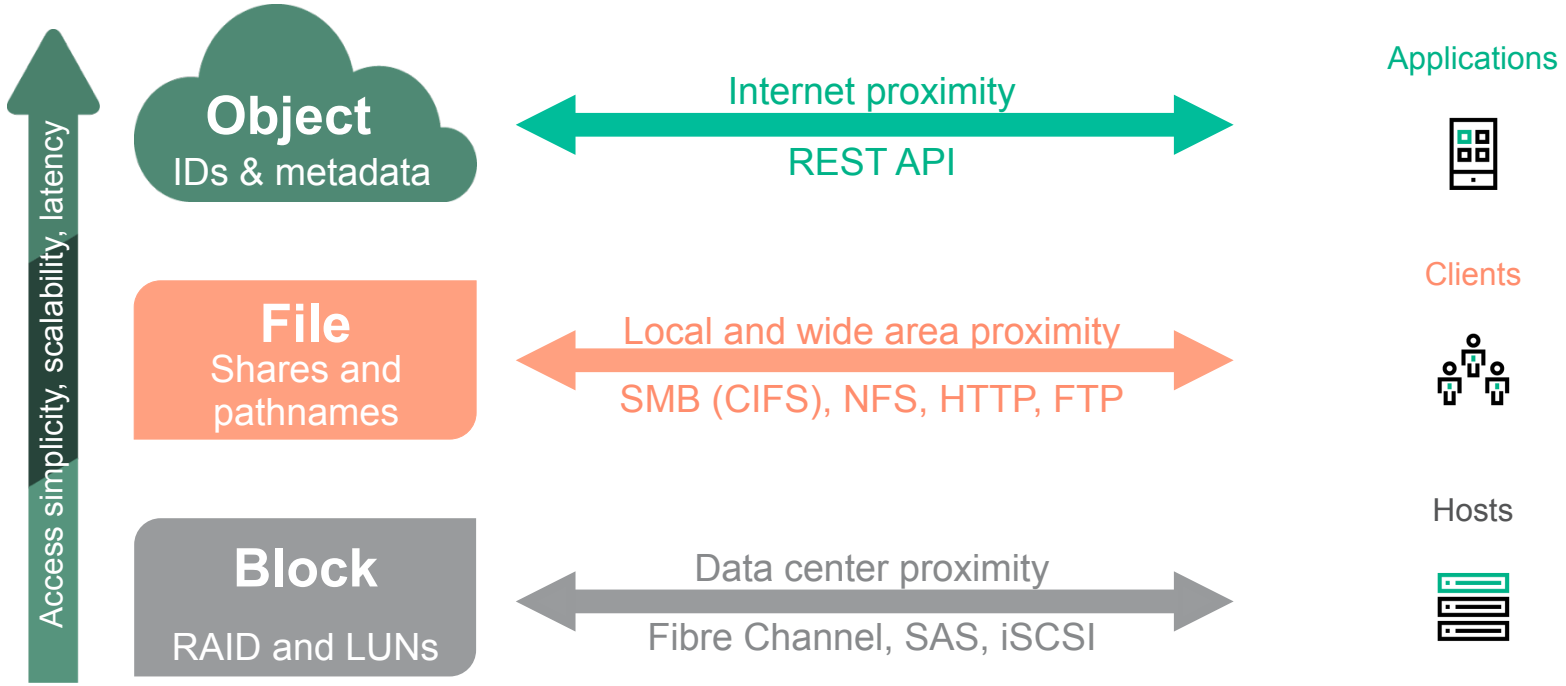
Traditional file systems

An object store system is like **valet parking** – someone parks your car for you, all size vehicles fit, your car is protected, and the lot grows as needed.



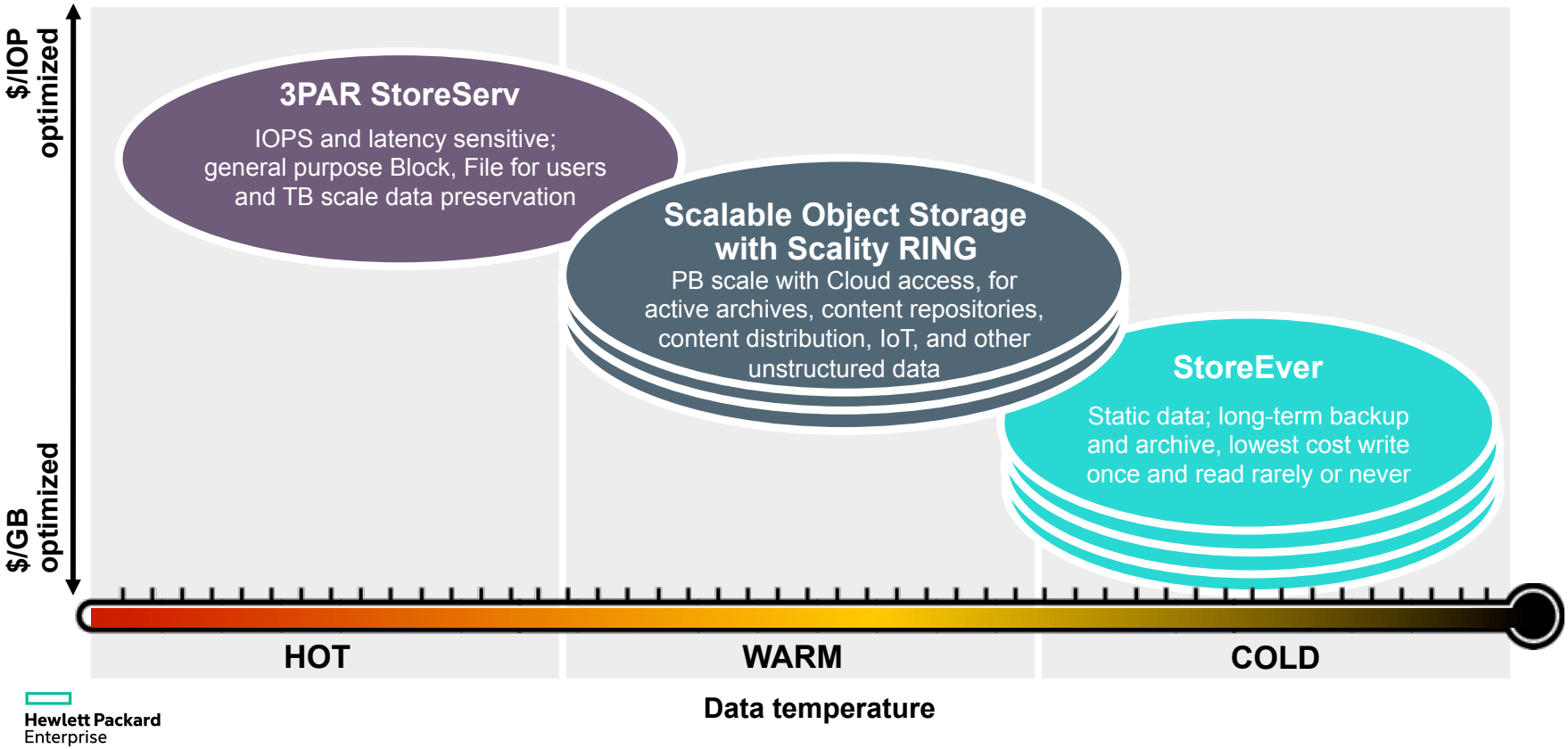
Object Store Systems

Block, file, and object compared



Hewlett Packard Enterprise

Using Object Storage alone or in tiered systems



Hewlett Packard Enterprise

HPE and Scality Platform

Hewlett Packard
Enterprise

Partnership and Investment

Alain Andreoli
Senior Vice President & General Manager
HPE Servers
Hewlett Packard Enterprise

Manish Goel
Senior Vice President & General Manager
HPE Storage
Hewlett Packard Enterprise

Hewlett Packard Enterprise

January 12, 2016

Hewlett Packard Enterprise and Scality announce enhanced partnership

Scality Strengthens Partnership with Hewlett Packard Enterprise for Software-Defined File and Object Storage

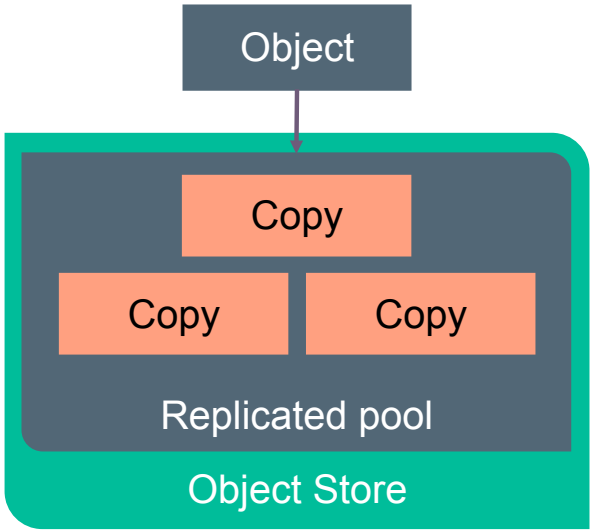
January 12, 2016 *Press Releases* *Tags: Hewlett Packard Enterprise*

English / French / German / Japanese

Accelerating growth with strategic equity investment, engineering collaboration, and sales programs

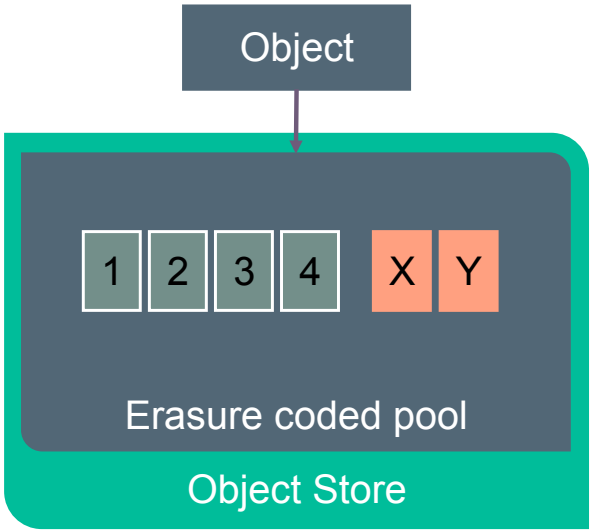
SAN FRANCISCO –January 12, 2016 – Today, Scality, the leader in software-defined storage for the information age, announced an enhanced partnership between Scality and Hewlett Packard Enterprise (HPE) designed to accelerate the adoption of software-defined object and file storage with enterprises and service providers who are struggling to overcome the problems of data storage at massive scale. The enhanced partnership includes a commitment to integrate engineering strategies and deepen go-to-market collaboration with new sales resources, marketing investment, and other business development programs. This builds on the October 2014 announcement where Hewlett Packard began packaging Scality RING software with its Apollo 4000 and ProLiant servers. As part of today's announcement, Hewlett Packard Ventures completed a strategic equity investment in Scality, as an addition to Series D.

Data durability: replication vs. erasure coding



Full copies of stored objects

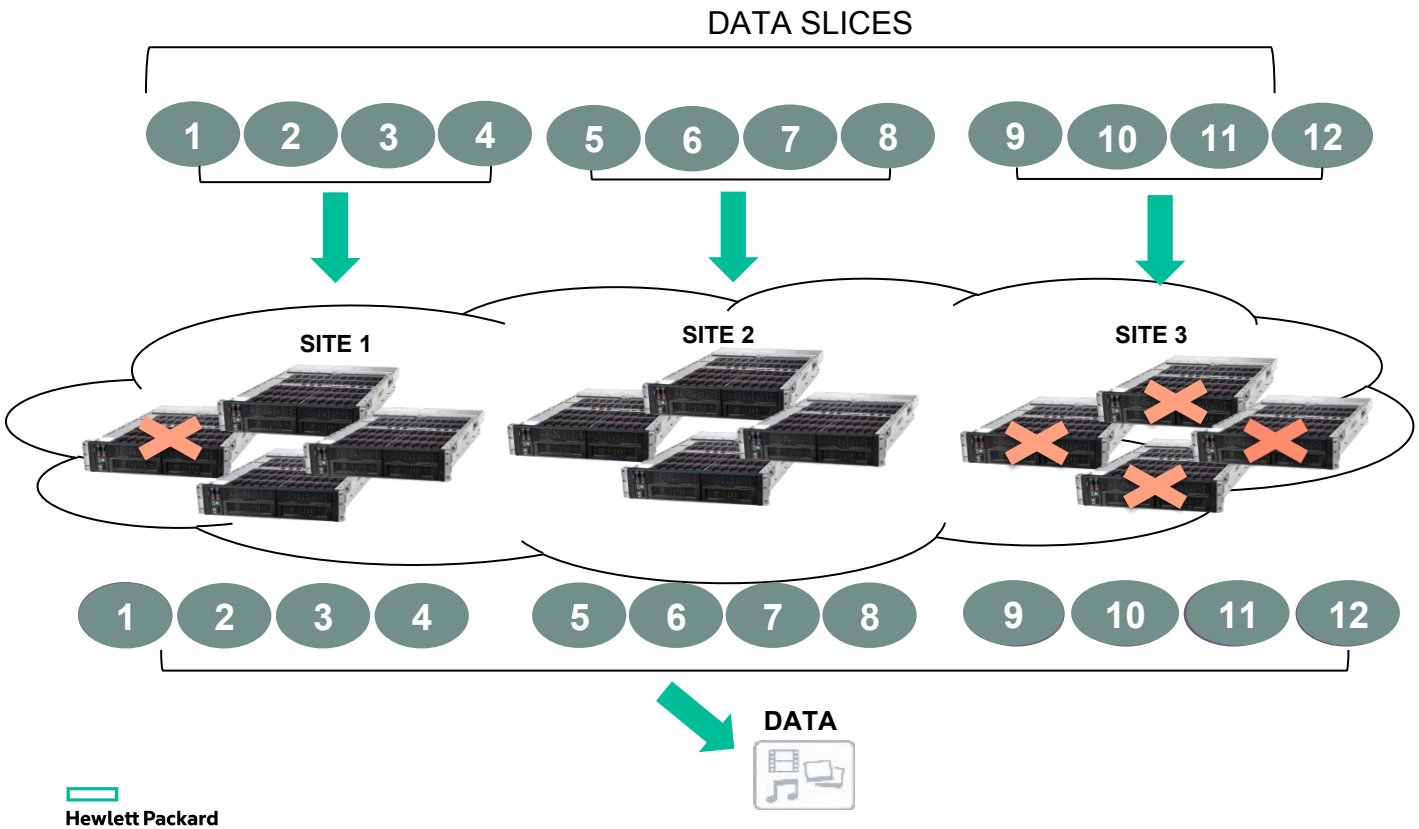
- High data durability
- Quicker data access possible



One copy plus parity

- Cost-effective, extreme durability
- Higher latency and data reconstruction overhead possible

How Erasure Coding Works (7,5)



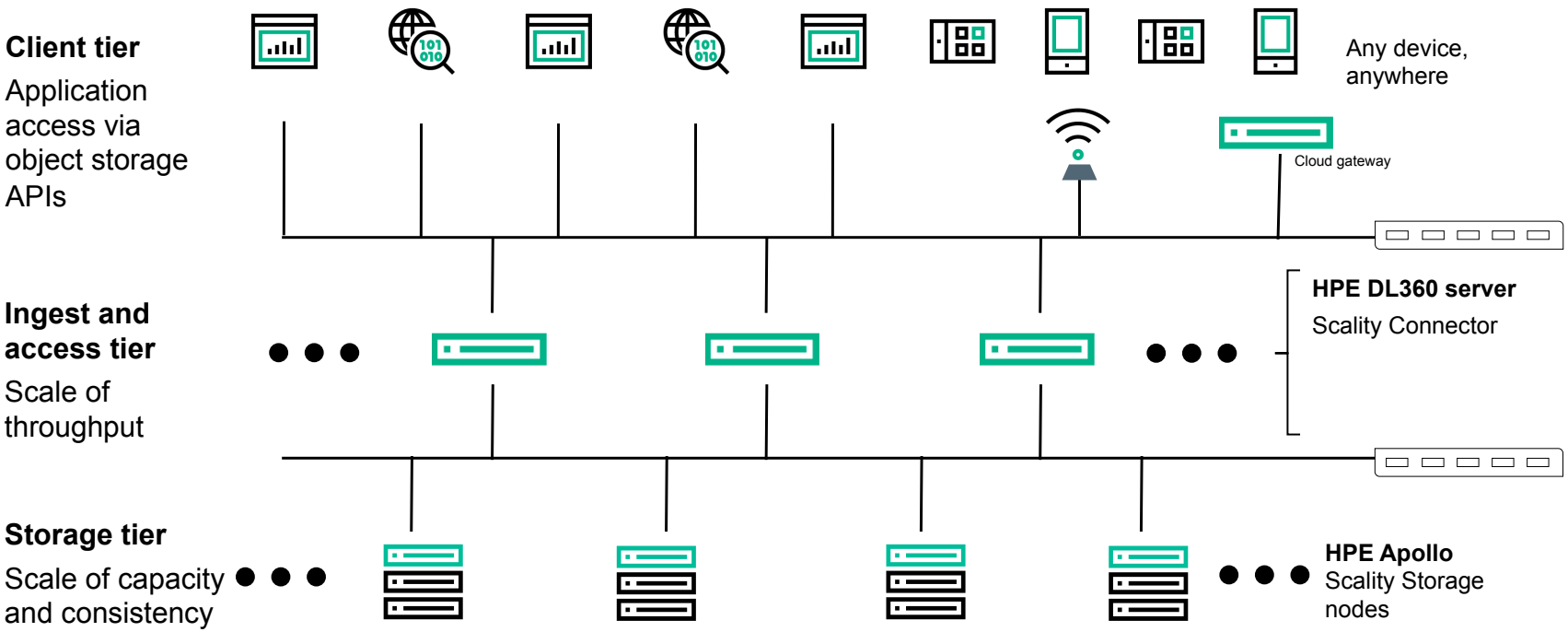
Data is fragmented using erasure coding algorithms.

Fragments are dispersed to separate disks, storage nodes and geographic locations.

Even with individual servers or entire sites down, data is retrieved from a subset of fragments

Hewlett Packard Enterprise

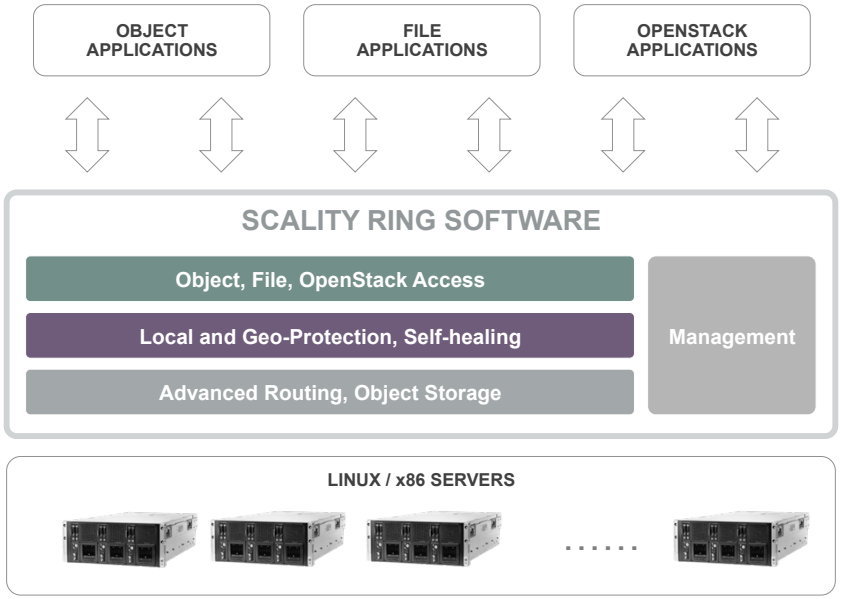
Object storage environment architecture



Hewlett Packard Enterprise

Scality Ring on HPE: Server-Based, Software-Defined Storage

SCALITY



- **Scale-out** - access and capacity (millions of clients, billions of objects)
- **Any-to-Any** – any client can access any object in parallel with no added latency
- **Shared-nothing** – no ”master” metadata node or SPOF for high availability
- **Self-healing** – automated, fast repair and rebuild
- **100% Software** – complete hardware choice, flexible deployment, 100% available during SW/HW upgrades, no data migrations

HPE Apollo Servers
Optimized for Object Storage

- High density lowers the cost of scale-out storage
- Tunable performance, CPU and memory configs to match any object workload
- Mix-and-match HDD/SDD for optimal object storage performance

Hewlett Packard Enterprise

HPE Scalable Object Storage with Scality RING

Focused on capacity-driven applications

Active Archives

Content Distribution

Web & Cloud Services

Petabyte-scale Enterprise Storage

Examples

- Private in-house cloud environment
- Public Cloud service providers
- Professional video production and distribution
- Consumer/social video, images
- Security, surveillance, CCTV, bodycams
- Satellite, Energy, Geological archives
- Enterprise backup / Enterprise archive
- Dropbox-like/document sync-n-share
- Big data analytics data tiering

Hewlett Packard Enterprise

HPE Apollo 4200 – Bringing Big Data Storage Server Density to the Enterprise

Storage Density

Plug & Play

Performance & Efficiency

Leadership storage density

- 224 TB in a 2U server

Enterprise bridge

- Fits traditional enterprise rack server data centers
- deploy today, no cost of change

Configuration flexibility

- Balanced capacity, performance and throughput with flexible options
- Disks, CPUs , I/O and interconnects

Highest storage density in a traditional 2U rack server – 224 TB

Hewlett Packard Enterprise

HPE Apollo 4510 - Purpose Built Hyperscale Object Storage Server

Efficient Object Storage solutions at any scale

Scalable Density

Rack-scale storage server density

- Up to 5.44 PB in 42U rack

Lower TCO

Cost effective

- 68 LFF HDDs/SSDs in 4U server chassis
- low-cost, power & space efficient solutions

Workload Optimized

Configuration flexibility

- Balance capacity, cost and throughput with flexible options for disks
- CPUs , I/O and interconnects

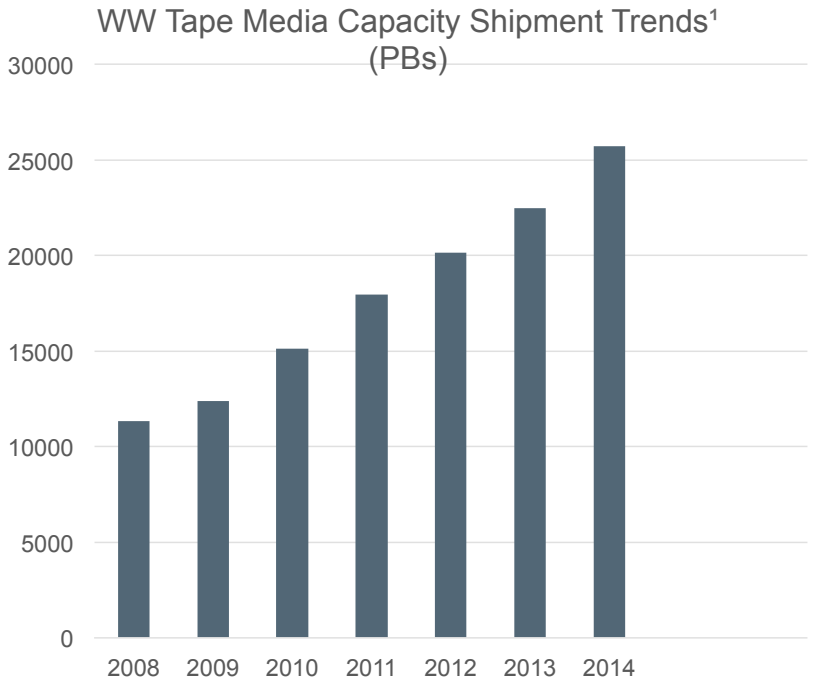
Rack-scale density for Object Storage solutions – 5.44 PB per Rack!

What’s the opportunity with HPE StoreEver?

Hewlett Packard
Enterprise

Customer demand for tape storage remains strong

- The worldwide tape market was worth **over $2.0 billion** in 2014[1]
- More data is being stored on tape with **record levels of tape media capacity shipments**[1]
- Installed base of **5.0 million LTO tape drives** and over **250 million LTO cartridges**[1]
- **82% of customers** plan to maintain or increase tape use for archive[2]



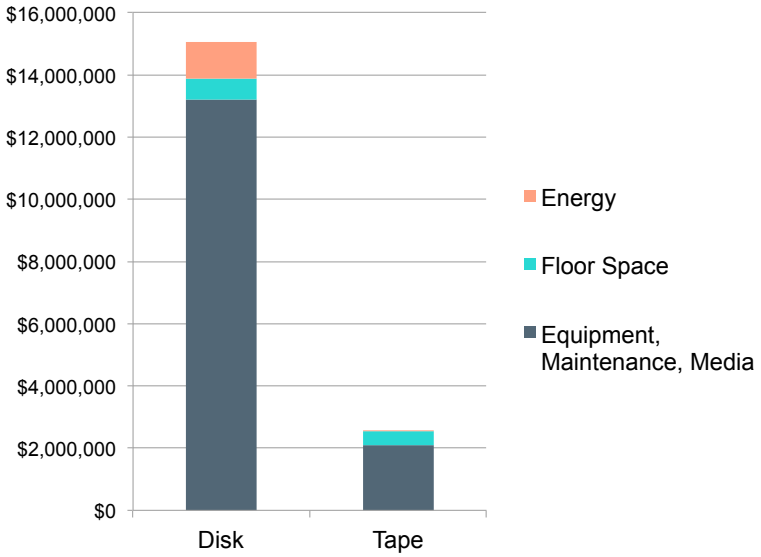
** Open system tape media shipments only – does not include enterprise media

Hewlett Packard Enterprise

[1] IDC/Santa Clara Consulting Group (SCCG)
[2]Enterprise Strategy Group (ESG)

LTO-7 delivers lowest TCO for long term archive

Comparing 9-year Average TCO for LTO-7 to Disk for Long Term Archived Data*



** The Clipper Group Inc, "The Impact of LTO-7 on The TCO of Long-Term Storage" September 2015*

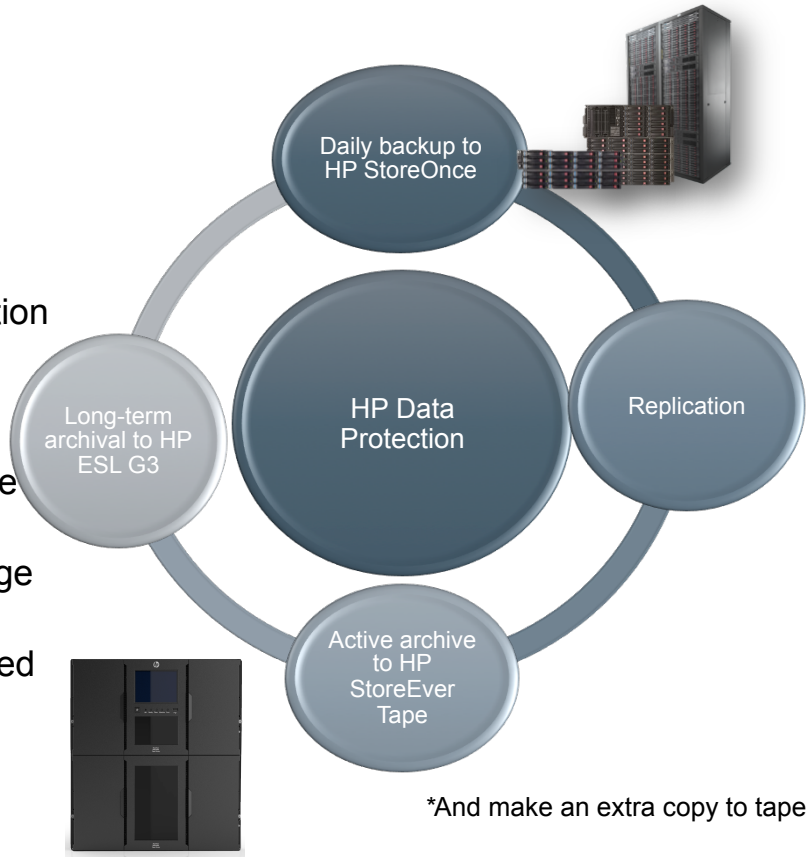
- Disk Storage is **6 x LTO-7 TCO**
  - Disk uses 110 x more energy
  - Disk requires 2 x floor space
- The cost of energy and floor space alone for the average disk-based solution **approximates the entire TCO for the average tape-based solution!**

Hewlett Packard Enterprise

Combine the Best of Disk and Tape

Tape backup when:
- Huge volumes of high performance streaming application data
- Local IT resources and/or investment in tape automation
- Need lowest cost per GB

Tape-based DR when:
- Physical transport to remote location
- Tape when long term storage needed:
- Backup/archive data retained for years



Disk backup when:
- Limited local IT resources
- Fast file restore a high priority
- Need multiple recovery points online
- Integrated Deduplication and Replication

Disk based DR when:
- Automated copy to remote location
  over a LAN/WAN needed

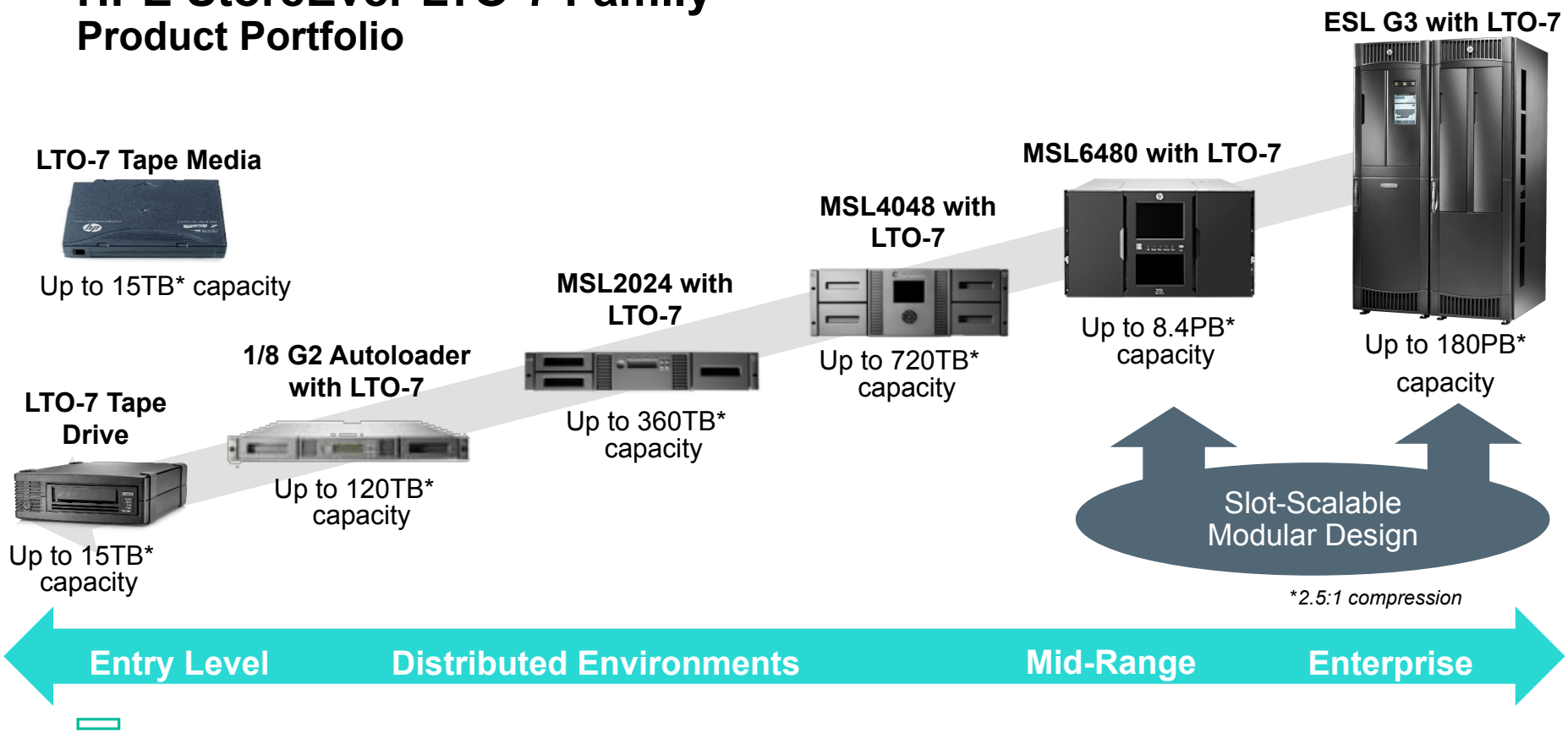
*And make an extra copy to tape for offsite DR

Hewlett Packard Enterprise

Introducing HPE StoreEver LTO-7

Hewlett Packard Enterprise

HPE StoreEver LTO-7 Family
Product Portfolio

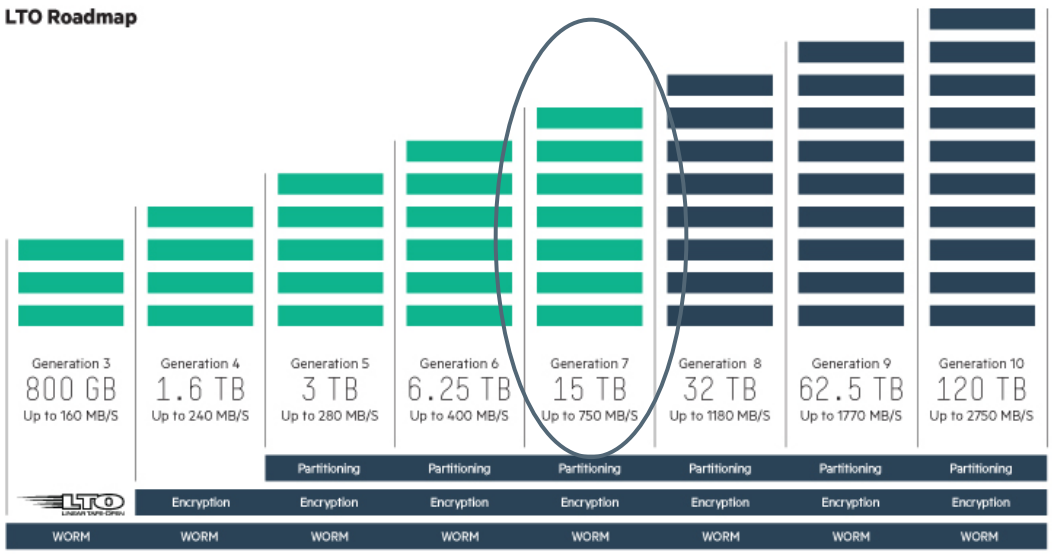


Hewlett Packard Enterprise

LTO tape delivers investment protection

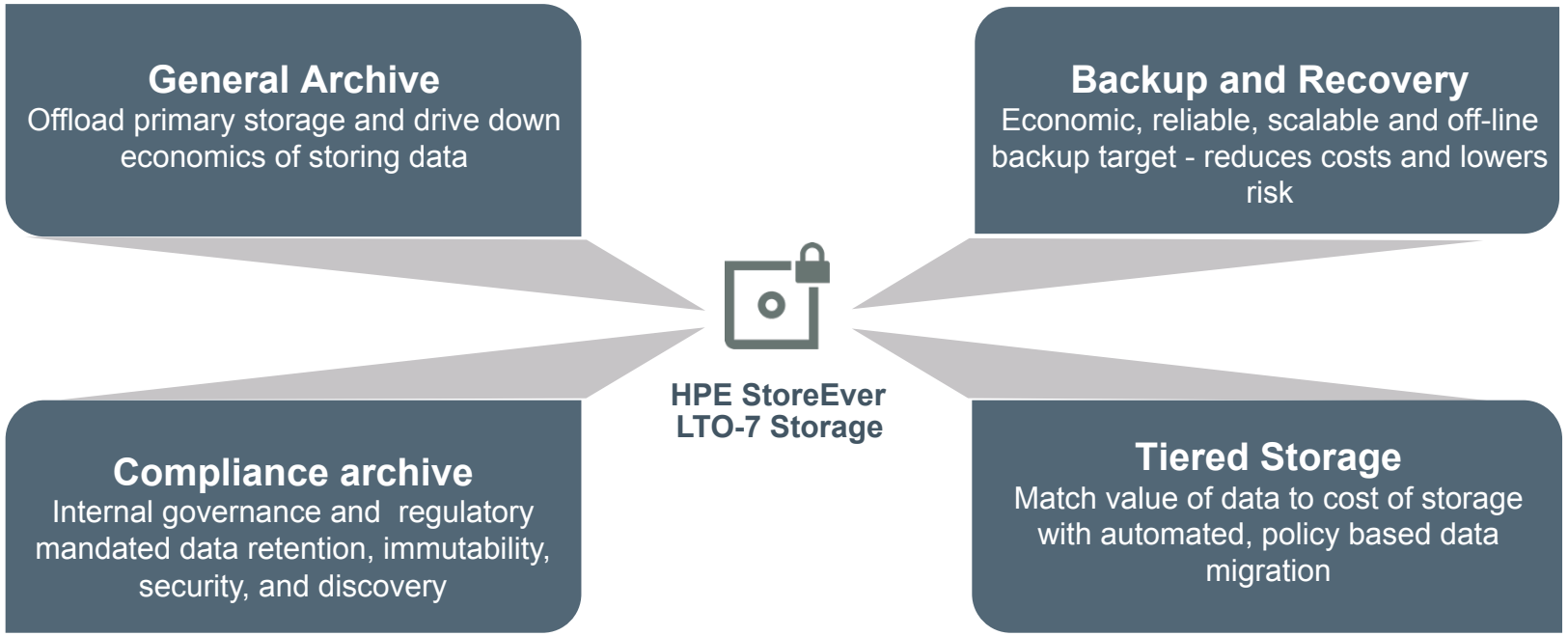
Open industry LTO standard with continued investment by major systems manufacturers

Hewlett Packard Enterprise



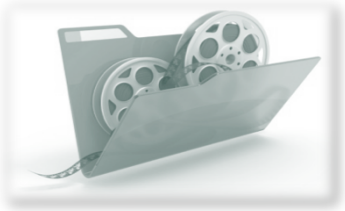
Hewlett Packard Enterprise

HPE StoreEver LTO-7 Use Cases



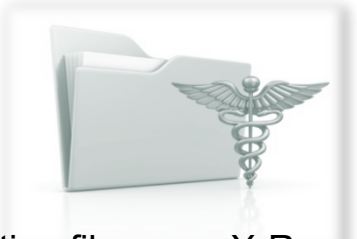
Hewlett Packard Enterprise

StoreEver target vertical markets: long-term archive and retention



Film:
Archiving existing footage
Capturing new productions

Broadcast media:
Archive footage at large TV networks



Medical:
Hi-resolution files e.g. X-Rays, 3D/4D ultrasound or patient files with legal and ethical complications

Backup forever:
Long term secure retention for compliance

Electronic records:
Scientific, geophysical, spatial designs etc.

Cloud storage:
Ingest and export repository

Digital surveillance:
Long-term IP tape storage

Hewlett Packard Enterprise

More information

http://www.hpe.com/storage/BURACompatibility - Data Agile BURA Compatibility Matrix. What works and what's supported. If customer asks what's supported, it'll be here.

Product pages, specs. and more info.

http://www.hpe.com/storage/

http://www.hpe.com/storage/MSL

http://www.hpe.com/storage/eslg3

Hewlett Packard Enterprise

Hewlett Packard
Enterprise

Thank you